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10/848,749	05/19/2004	Seyed A. Zekavat	066040-9763-02	4641

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EXAMINER

BHATTACHARYA, SAM

ART UNIT	PAPER NUMBER
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2617

SHORTENED STATUTORY PERIOD OF RESPONSE	MAIL DATE	DELIVERY MODE
3 MONTHS	01/26/2007	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

If NO period for reply is specified above, the maximum statutory period will apply and will expire 6 MONTHS from the mailing date of this communication.

Office Action Summary

Application No.

10/848,749

Applicant(s)

ZEKAVAT, SEYED A.

Examiner

Sam Bhattacharya

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 23 October 2006.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-5,7-19 and 21-28 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-5,7-19 and 21-28 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Claim Rejections - 35 USC § 103

1. The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.
2. Claims 1 and 4-10 are rejected under 35 U.S.C. 103(a) as being unpatentable over Lee (2002/0167444) in view of Dupray (US 6,249,252).

Regarding claim 1, Lee discloses a system and method of locating mobiles 501 via a base station 502, the method including transmitting a first wireless signal from the base station at a first time; receiving the first wireless signal at at least one of the mobiles; transmitting a second wireless signal from the at least one mobile in response to receiving the first wireless signal; receiving the second wireless signal at the base station at a second time; determining a time difference by TOA unit 504 between the first time and the second time; determining an angle of arrival of the second wireless signal; and locating the at least one mobile based on the angle of arrival and the time difference. See FIG. 5 and paragraphs 48 – 51.

Lee fails to disclose the base station is a mobile base station. However, in an analogous art, Dupray discloses system of wireless location using multiple estimators in which a mobile base station is used for time difference in conjunction with a mobile to determine locations. See col. 11, lines 29-57. Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the system in Lee by incorporating this teaching in Dupray for the purpose of acquiring relative locations and velocities.

Regarding claims 4 and 8, Lee discloses that transmitting the first wireless signal including providing a carrier frequency between about 2 GHz and about 3 GHz, since communications in this frequency range is carried out between base stations and mobile stations.

Regarding claim 5, Lee discloses that receiving the second wireless signal includes receiving the second wireless signal at least one of an antenna array and a rake receiver array. See paragraph 47.

Regarding claim 6, Lee discloses that the dynamic base station is stationary (since the base station is fixed). See FIG. 5.

Regarding claim 7, Lee discloses that transmitting the first wireless signal includes transmitting the first wireless signal using at least one of a long term fading technique, and short term fading technique, since signal fading is an inherent property of wireless signals.

Regarding claim 9, Lee discloses beamforming the second wireless signal, since the mobile transmits directly to the base station.

Regarding claim 10, Lee discloses that transmitting the first wireless signal includes omni-directionally transmitting the first wireless signal, since the signal is broadcast by the base station.

3. Claims 2 and 3 are rejected under 35 U.S.C. 103(a) as being unpatentable over Lee in view of Dupray and Carlsson et al. (US 6,167,240).

Regarding claims 2 and 3, the combination of Lee and Dupray fails to disclose that transmitting the first wireless signal includes generating an identification request; and modulating the identification request with a CDMA access scheme.

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However, in an analogous art, Carlsson discloses transmitting a signal from a base station to a mobile station generating an identification request modulated on a CDMA access scheme. See FIGS. 1 and 4, col. 5, lines 9-33 and col. 6, line 27 – col. 7, line 15. Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the system in Lee and Dupray by incorporating this teaching in Carlsson for the purpose of determining whether the mobile station is an authorize mobile station in the system.

4. Claims 11 is rejected under 35 U.S.C. 103(a) as being unpatentable over Lee in view of Dupray and Corbett et al. (US 6,934,546).

Regarding claim 11, the combination of Lee and Dupray fails to disclose that determining a time difference includes determining velocities of both the mobile and the dynamic base station.

However, in an analogous art, Corbett discloses determining a time difference by determining the relative velocities of mobile and base station. See col. 5, lines 18-42. Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the system in Lee and Dupray by incorporating this teaching in Corbett for the purpose of projecting the mobile station's likely trajectory based on its current position and velocity.

5. Claims 12 and 15-20 are rejected under 35 U.S.C. 103(a) as being unpatentable over Lee in view of Dupray and Ho et al. (US 6,025,799).

Regarding claim 12, Lee discloses a method of locating a target from a base 502, wherein the base has an omni-directional means (broadcast antenna) for transmitting a base wireless

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signal, and an antenna array means (see paragraph 47) for receiving a target signal and capable of determining a reception angle of the target signal by AOA unit 505, the method including omni-directionally transmitting the activating signal from the omni-directional means at a first time; receiving the target wireless signal at the antenna array means at a second time; determining from the antenna array means the reception angle of the target signal; comparing the first time with the second time to obtain a signal travel time; and locating the target based on the signal travel time and the reception angle of the target signal. See FIG. 5 and paragraphs 48 – 51.

Lee fails to disclose the base station is a mobile base station. However, in an analogous art, Dupray discloses system of wireless location using multiple estimators in which a mobile base station is used for time difference in conjunction with a mobile to determine locations. See col. 11, lines 29-57. Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the system in Lee by incorporating this teaching in Dupray for the purpose of acquiring relative locations and velocities.

The combination of Lee and Dupray fails to disclose activating the transponding means at the target in response to receiving the activating signal; transmitting a target signal from the transponding means after the transponding means has been activated.

However, in an analogous art, Ho discloses activating the transponding means at the target vehicle in response to receiving the activating signal and transmitting a target signal from the transponding means after the transponding means has been activated. See FIG. 2 and col. 4, lines 28-64. Therefore, it would have been obvious to one of ordinary skill in the art at the time

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the invention was made to modify the system in Lee and Dupray by incorporating this teaching in Ho for the purpose of automatically responding to a request signal sent from the base station.

Claim 15 incorporates the limitations of claims 4 and 12, and is therefore rejected for the same reasons as these claims.

Claim 16 incorporates the limitations of claims 5 and 12, and is therefore rejected for the same reasons as these claims.

Claim 17 incorporates the limitations of claims 7 and 12, and is therefore rejected for the same reasons as these claims.

Claim 18 incorporates the limitations of claims 8 and 12, and is therefore rejected for the same reasons as these claims.

Claim 19 incorporates the limitations of claims 9 and 12, and is therefore rejected for the same reasons as these claims.

Claim 20 incorporates the limitations of claims 6 and 12, and is therefore rejected for the same reasons as these claims.

6. Claims 12, 13 and 21-29 are rejected under 35 U.S.C. 103(a) as being unpatentable over Lee in view of Dupray and Ho et al., and further in view of Carlsson et al.

Regarding claim 21, Lee discloses a method of locating a selected one of a plurality of mobiles 501 from a dynamic base 502, the method including transmitting a wireless activating signal from the dynamic base at a first time; receiving the wireless signals at the dynamic base at a plurality of arrival times; determining a reception angle of the wireless signal of the selected mobile by AOA unit 505; comparing the first time with the arrival time of the wireless signal of

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the selected mobile to obtain a time difference; and locating the selected mobile based on the time difference and the reception angle. See FIG. 5 and paragraphs 48 – 51.

Lee fails to disclose the base station is a mobile base station. However, in an analogous art, Dupray discloses system of wireless location using multiple estimators in which a mobile base station is used for time difference in conjunction with a mobile to determine locations. See col. 11, lines 29-57. Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the system in Lee by incorporating this teaching in Dupray for the purpose of acquiring relative locations and velocities.

The combination of Lee and Dupray fails to disclose activating the transponding means at the target in response to receiving the activating signal; transmitting a target signal from the transponding means after the transponding means has been activated.

However, in an analogous art, Ho discloses activating the transponding means at the target vehicle in response to receiving the activating signal and transmitting a target signal from the transponding means after the transponding means has been activated. See FIG. 2 and col. 4, lines 28-64. Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the system in Lee and Dupray by incorporating this teaching in Ho for the purpose of automatically responding to a request signal sent from the base station.

The combination of Lee, Dupray and Ho fails to disclose comparing the unique mobile signature of each wireless signal with a known unique mobile signature of the selected mobile and identifying the wireless signal of the selected mobile based upon a match between the known unique mobile signal and the unique mobile signal of one of the wireless signals.

However, Carlsson discloses these features in FIGS. 1 and 4, col. 5, lines 9-33 and col. 6, line 27 – col. 7, line 15. Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the system in Lee, Dupray and Ho by incorporating this teaching in Carlsson for the purpose of determining whether the mobile station is an authorize mobile station in the system.

Claim 13 incorporates the limitations of claims 2 and 12, and is therefore rejected for the same reasons as these claims.

Claim 14 incorporates the limitations of claims 3 and 12, and is therefore rejected for the same reasons as these claims.

Claim 22 incorporates the limitations of claims 2 and 21, and is therefore rejected for the same reasons as these claims.

Claim 23 incorporates the limitations of claims 3 and 21, and is therefore rejected for the same reasons as these claims.

Claim 24 incorporates the limitations of claims 4 and 21, and is therefore rejected for the same reasons as these claims.

Claim 25 incorporates the limitations of claims 5 and 21, and is therefore rejected for the same reasons as these claims.

Claim 26 incorporates the limitations of claims 7 and 21, and is therefore rejected for the same reasons as these claims.

Claim 27 incorporates the limitations of claims 8 and 21, and is therefore rejected for the same reasons as these claims.

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Claim 28 incorporates the limitations of claims 9 and 21, and is therefore rejected for the same reasons as these claims.

Claim 29 incorporates the limitations of claims 6 and 21, and is therefore rejected for the same reasons as these claims.

Response to Arguments

7. Applicant's arguments with respect to the claims have been considered but are moot in view of the new ground(s) of rejection.

Conclusion

8. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.


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Any inquiry concerning this communication or earlier communications from the examiner should be directed to Sam Bhattacharya whose telephone number is (571) 272-7917. The examiner can normally be reached on Weekdays, 9-6, with first Fridays off.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, George Eng can be reached on (571) 272-7495. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

sb


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SUPERVISORY PATENT EXAMINER